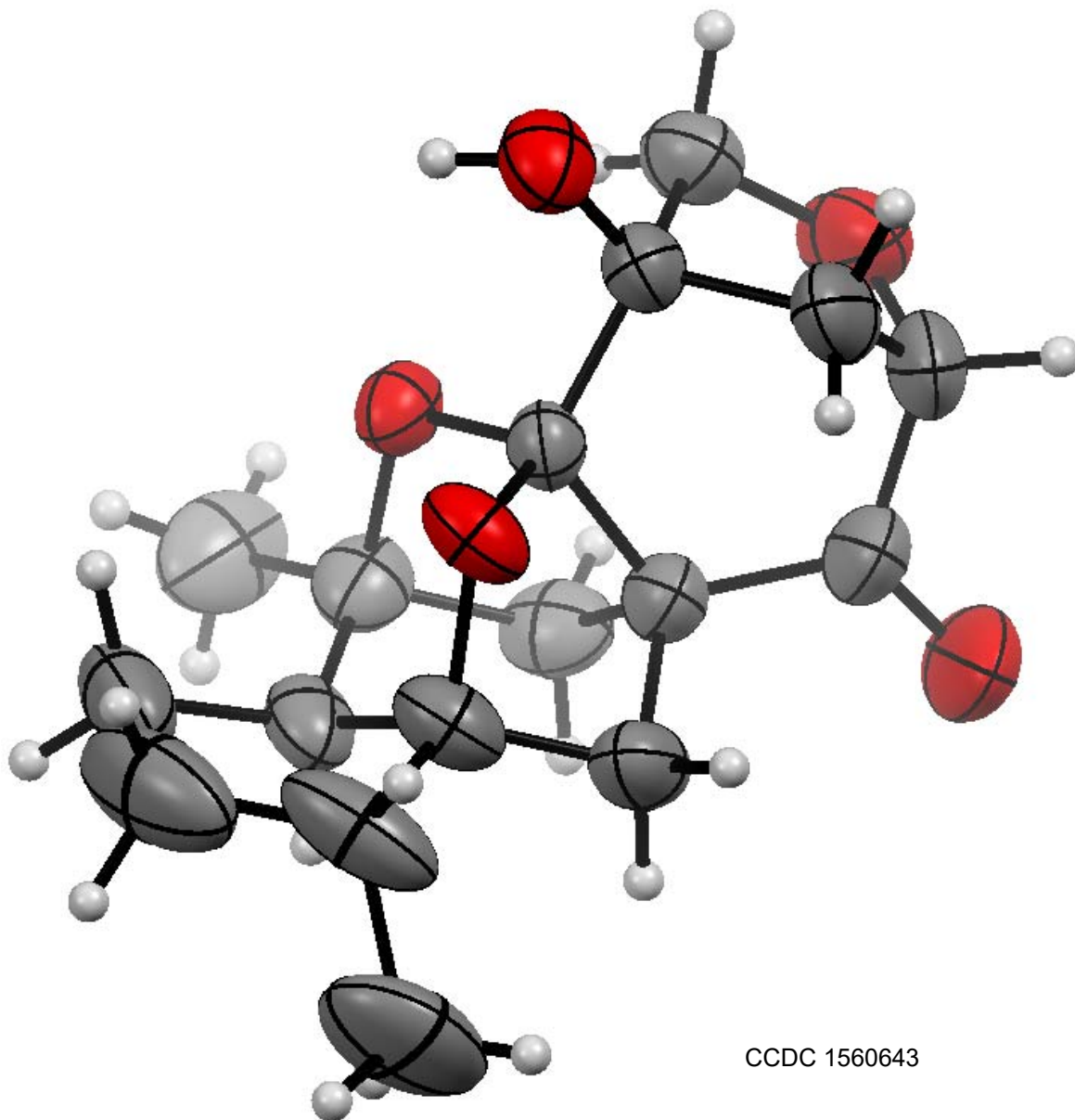
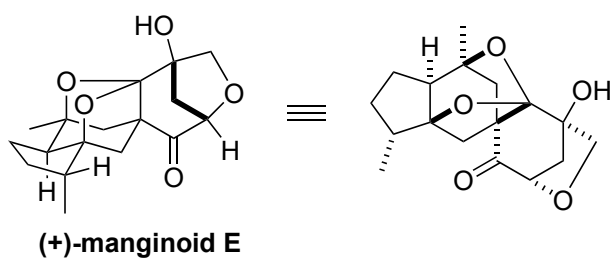


Problem Session (11)

2019/08/31 MASANORI NAGATOMO

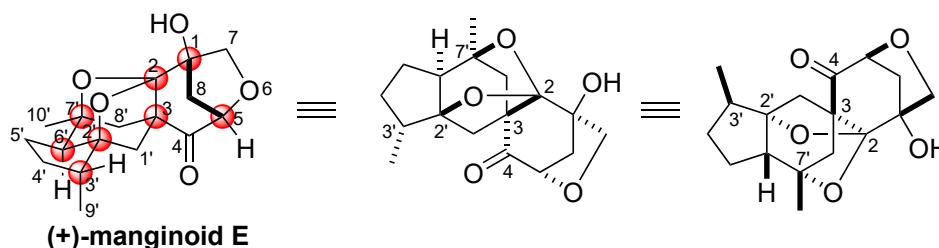
Please propose your synthetic route to (+)-manginoid E from a commercially available compound.



Problem Session (11)- Answer

2019/08/31 MASANORI NAGATOMO

Synthetic Plan of (+)-Manginoid E



Isolation: Monoterpene-shikimate-conjugated meroterpenoid isolated from *Guignardia mangiferae* causing mango brown leaf blight.

Chen, K., Zhang, X., Sun, W., Liu, J., Yang, J., Chen, C., Liu, X., Gao, L., Wang, J., Li, H., Luo, Z., Xue, Y., Zhu, H., Zhang, Y. *Org. Lett.* **2017**, *19*, 5956-5959.

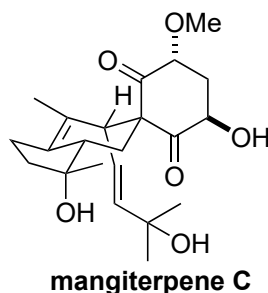
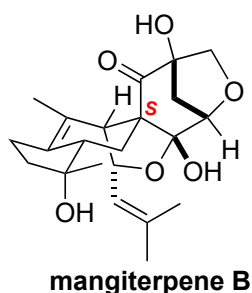
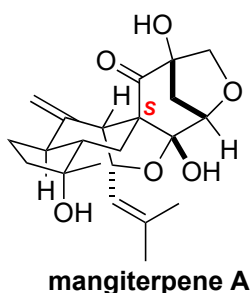
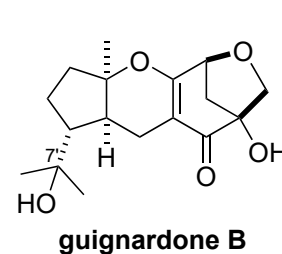
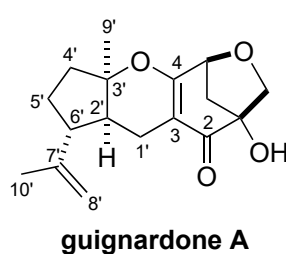
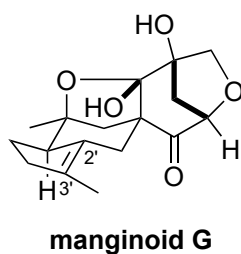
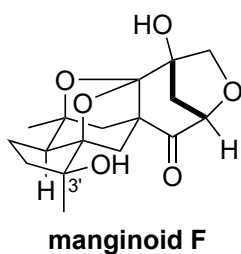
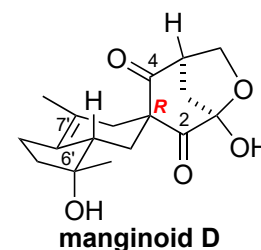
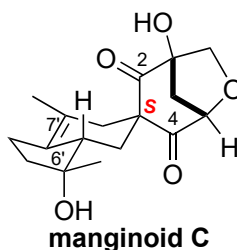
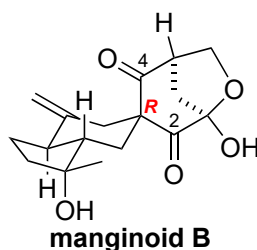
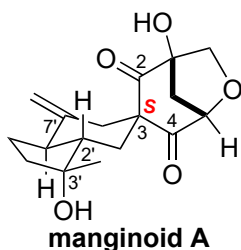
Bioactivities: Manginoid A has an inhibitory activity against 11 β -hydroxysteroid dehydrogenase type 1 with an IC₅₀ value of 0.84 μ M, but manginoid E currently has no activity.

Structural features: Caged hexacyclic compound having 2,4-dioxatricyclo[3.3.1.0^{3,7}]nonane motif, which fuses with a 6-oxabicyclo[3.2.1]octane moiety.

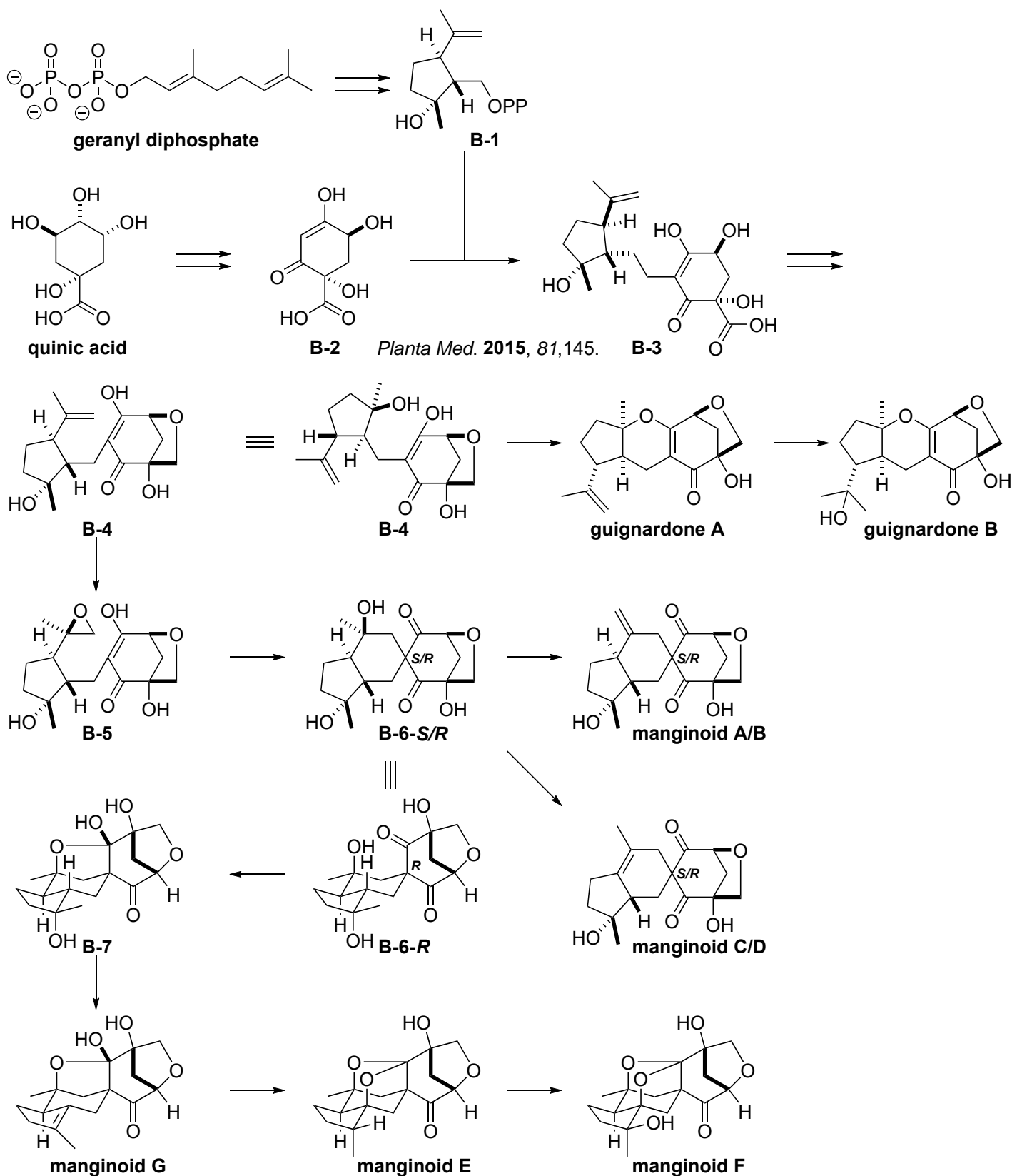
A very similar structure to manginoid A-D and F, G, and guignardone A and B, and mangiterpene A-C.

Total synthesis

No report



Proposed biosynthesis



Org. Lett. **2017**, *19*, 5956

Our original synthetic plans of (+)-manginoid E are not depicted.